Results: We included 1403 participants (54.0% women) with mean (SD) age of 62.7 years and mean (SD) BMI of 27.8 kg/m2 at the time of hand OA assessment, of whom 339 (24.2%) had symptomatic hand OA. There was no association between symptomatic hand OA and overall mortality (table). Although we did not find a significant association to cardiovascular events overall, we found a significant association between symptomatic hand OA and coronary heart disease (table), which was seen in both cohorts when analysed separately (data not shown). The associations remained after adjustment for age, sex, BMI and cohorts as well as metabolic risk factors, smoking, alcohol and medication use (table). There were no significant associations to congestive heart failure and atherothrombotic stroke (table).

Conclusions: In the Framingham cohorts, symptomatic hand OA was not associated with increased overall mortality. However, it was associated with an increased risk of coronary heart disease events, whereas no associations were found to congestive heart failure and atherothrombotic stroke. These findings may suggest that there are common unknown metabolic or systemic risk factors for symptomatic hand OA and coronary heart disease.

Hazard ratio (95% CI) of mortality and cardiovascular events in hand OA (no hand OA as ref)

	Crude model	Adjusted model 1 (adjusted for age, sex, BMI and cohort)	Adjusted model two (adjusted for age, sex, BMI, cohort and other covariates from baseline)
Overall mortality	1.06 (0.84-1.34)	0.84 (0.66-1.06)	0.86 (0.67-1.11)
Cardiovascular events	1.58 (1.19-2.09)	1.23 (0.91-1.65)	1.33 (0.97-1.82)
- Coronary heart disease	1.88 (1.29-2.76)	1.72 (1.15-2.58)	1.90 (1.23-2.92)
- Congestive heart failure	1.50 (1.04-2.16)	1.11 (0.76-1.61)	1.17 (0.78-1.75)
- Atherotrombotic stroke	1.08 (0.58-2.00)	0.79 (0.42-1.51)	0.82 (0.43-1.59)

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USE OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS IN YEAR 1 FOLLOWING TOTAL KNEE ARTHROPLASTY AND IMPLANT SURVIVAL: A REGISTER-BASED COHORT STUDY

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Purpose: Although implant survival and patient-reported outcomes (PROMs) are considered the most valid measurement of surgery success, there is a growing interest to identify alternative short-term surrogates for failure.

We aimed to validate non-steroidal anti-inflammatory drugs (NSAIDs) utilisation in the first year following total knee (TKA) and hip (THA) arthroplasty as a predictor of implant survival.

Methods: Study design and population: A retrospective cohort study was conducted using data from the Catalan Joint Registry (RACAT) linked to computerized primary care records and pharmacy invoice data (SIDIAP Database). We identified patients aged >=40 years undergoing primary TKA/THA for knee/hip osteoarthritis registered in both RACAT and SIDIAP during the study period (2005-July/2012). Patients receiving revision surgery in the first year post-surgery were excluded.

- Exposure: NSAID utilisation was measured using pharmacy invoice data, and quantified in number of Daily Defined Doses (DDDs) according to the WHO ATC/DDD index. We further categorized this into quintiles, and classified patients in the top quintile as those having a "poor outcome".
- Outcome and analysis: Participants were followed up until the end of study (31/07/2012), date of transfer-out, revision surgery, or death, whatever came first. Fine and Gray regression was used to model implant survival according to NSAID utilisation taking into account competing risk with death. Multivariable models were adjusted for gender, age, socio-economic status, Charlson Comorbidity Index, alcohol drinking, smoking status, and body mass index.

Results: 22,221/23,197 (95.8%) and 10,173/16,703 (60.9%) study participants were identified as undergoing TKA and THA for knee and hip osteoarthritis respectively. TKA and THA participants were followed up for a median(inter-quartile range) of 3.20 (2.08-4.71) and 2.22 (1.17-3.72) years. In this time, 724 (3.3%) TKA and 428 (2.6%) THA patients were revised, 634 (2.9%) and 2,105 (12.6%) died, and 83 (0.4%) and 108 (0.7%) were lost to follow-up before the end of study.

Percentiles 20,40, 60 and 80 of NSAID DDDs used in the first year post-surgery were 35.8, 93.3, 171.7, and 293.4 DDDs amongst TKA patients, and 6.7, 43.3, 104.5 and 220.0 amongst THA participants. Rates of revision after the first year were positively associated with utilisation of NSAIDs: adjusted sub-hazard ratio (SHR) 1.22 [95% Confidence Interval 1.14-1.31; p<0.001] per quintile for TKA, 1.29 [1.08-1.54; p=0.005] for THA [Figure]. Additionally, 151 (3.9%) patients out of the 3,862 TKA patients, and 23 (2.1%) out of 1,081 THA participants defined as "bad outcome" were revised compared to 388 (2.11%) and 76 (1.1%) out of the remaining TKA and THA participants respectively. This corresponded to adjusted SHR of 1.63 [1.32-2.00], p<0.001 for TKA, and SHR 2.26 [1.33-3.84], p=0.002 for THA.

Conclusions: NSAID utilisation in the first year following elective TKA/THA for knee/hip osteoarthritis is directly related to revision risk in subsequent years. TKA and THA patients within the top quintile of NSAID usage in that period have 60% and 2.2-fold higher risk of revision when compared to those requiring lower doses respectively. A definition of "bad outcome" based on NSAID utilisation in the first year post-surgery is a valid surrogate for implant survival in patients undergoing primary TKA/THA for osteoarthritis.